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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/541,765 | 04/03/2000 | Mareike Klee | PHD 99.046 | 4722 |

24737 7590 06/20/2003

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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BRIARCLIFF MANOR, NY 10510

EXAMINER

THOMAS, ERIC W

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2831

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/541,765

Applicant(s)

KLEE ET AL.

Examiner

Eric W Thomas

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Introduction

The finality of the action dated 11/20/02 has been withdrawn in lieu of the following action.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Perino et al. (US 5,525,528).

Perino et al. disclose in fig. 7, a ceramic (dielectric) passive component (31) comprising a carrier substrate (33); one first electrode (35, 37) formed of a metal and having a first surface disposed on the substrate, a dielectric (39) of a thickness of 0.3 microns (see col. 7 lines 29-30) having a first surface disposed, on a second surface of the first electrode opposing the first surface of the first electrode and a second electrode (41), disposed on a second surface of the dielectric opposing the first surface of the dielectric, wherein the dielectric is a ferroelectric ceramic with a voltage-dependent relative dielectric constant (inherent feature of the claimed material--PZT).

Regarding claim 2, Perino et al. disclose the ferroelectric ceramic material with a voltage-dependent dielectric constant is a $\text{Pb}(\text{Zr}_x\text{Ti}_{1-x})\text{O}_3$ wherein x varies from 0 to 1 (see col. 1 lines 10-11).

Art Unit: 2831

Regarding claim 3, Perino et al. disclose the at least one first electrode comprise at least a first (35) and a second (37) electrically conducting layer.

Regarding claim 4, Perino et al. disclose the first electrically conducting layer of the at least first electrode comprises Ti (col. 7 lines 20-30).

Regarding claim 5, Perino et al disclose the second electrically conducting layer of the at least one first electrode comprises a metal (see col. 7 lines 20-30).

Regarding claim 6, Perino et al disclose the carrier substrate is formed from a silicon material (see col. 7 lines 20-30).

Claim Rejections - 35 USC § 103

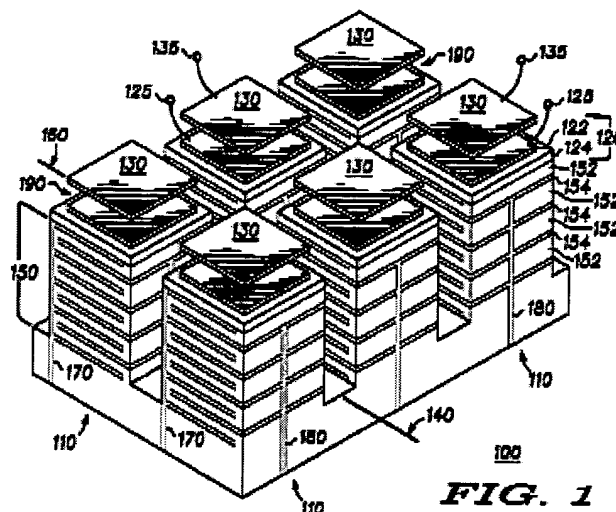
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2831

5. Claims 1-3, 5-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malone et al. (US 6,088,214) in view of Perino et al. (US 5,525,528).

**FIG. 1**

Regarding claims 1, & 10, Malone et al. disclose in fig. 1, a ceramic passive component (100) comprising a carrier substrate (col. 9 lines 40-45, col. 1 lines 35-37); one first electrode (154) formed of a metal and having a first surface disposed on the substrate, a dielectric (152) having a first surface disposed, on a second surface of the first electrode opposing the first surface of the first electrode and a second electrode (154, 122 & col. 2 lines 39-48), disposed on a second surface of the dielectric opposing the first surface of the dielectric, wherein the dielectric is a ferroelectric ceramic with a voltage-dependent relative dielectric constant (see abstract materials). (Regarding claim 10, the ceramic passive component can be used in a filter (col. 1 lines 30-40)).

Malone et al. disclose the claimed invention except for the thickness of the at least one dielectric layer being in the range of about 0.25-0.75 μm .

Perino et al. teach the use of a PZT dielectric layer having a thickness of 0.3 μm . It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the capacitor of Malone et al. by forming the PZT dielectric layer with a thickness of 0.3 μm as taught by Perino et al., since such a modification would miniaturize the capacitor.

Regarding claim 2, Malone et al. disclose the ferroelectric ceramic material with a voltage-dependent dielectric constant is a $\text{Pb}(\text{Zr}_x\text{Ti}_{1-x})\text{O}_3$ wherein x varies from 0 to 1 (abstract).

Regarding claim 3, Malone et al. disclose the second electrode (152, 122 & col. 2 lines 39-48) comprises first (152) and second (122 (without 124 –see col. 2 lines 39-48) electrically conducting layers.

Regarding claim 5, Malone et al. disclose the second electrically conducting layer (122) comprises a metal.

Regarding claim 6, Malone et al. disclose the claimed invention except for the substrate is formed from a ceramic material. Substrates formed from ceramic materials are well known in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the substrate of the component of Malone et al. from a ceramic material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding claim 7, Malone et al. disclose the claimed invention except for the dielectric being formed from multiple layers. Forming a dielectric from multiple layers is

Art Unit: 2831

well known in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the dielectric from multiple layers, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claim 8, Malone et al. disclose the claimed invention. Although Malone et al. do not expressly disclose "a protective layer is laid over the entire of the component", the component inherently has a protective element surrounding the entire component (i.e. a housing) to protect the system from the external environment.

Regarding claim 9, Malone et al. disclose in fig. 1, a ceramic passive component (100) comprising a carrier substrate (col. 9 lines 40-45, col. 1 lines 35-37); one first electrode (154) formed of a metal and having a first surface disposed on the substrate, a dielectric (152) having a first surface disposed, on a second surface of the first electrode opposing the first surface of the first electrode and a second electrode (154, 122 & col. 2 lines 39-48), disposed on a second surface of the dielectric opposing the first surface of the dielectric, wherein the dielectric is a ferroelectric ceramic with a voltage-dependent relative dielectric constant (see abstract materials).

Malone et al. do not expressly state that the passive component is used in a voltage-controlled oscillator; and the thickness of the at least one dielectric layer being in the range of about 0.25-0.75 μm .

The recitation "a voltage-controlled oscillator" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the

intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Perino et al. teach the use of a PZT dielectric layer having a thickness of 0.3 μm . It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the capacitor of Malone et al. by forming the PZT dielectric layer with a thickness of 0.3 μm as taught by Perino et al., since such a modification would miniaturize the capacitor.

Regarding claim 11, Malone et al. disclose in fig. 1, a ceramic passive component (100) comprising a carrier substrate (col. 9 lines 40-45, col. 1 lines 35-37); one first electrode (154) formed of a metal and having a first surface disposed on the substrate, a dielectric (152) having a first surface disposed, on a second surface of the first electrode opposing the first surface of the first electrode and a second electrode (154, 122 & col. 2 lines 39-48), disposed on a second surface of the dielectric opposing the first surface of the dielectric, wherein the dielectric is a ferroelectric ceramic with a voltage-dependent relative dielectric constant (see abstract materials).

Malone et al. disclose the claimed invention but do not expressly state that the passive component is used in a delay line; and the thickness of the at least one dielectric layer being in the range of about 0.25-0.75 μm .

The recitation "a delay line" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable

Art Unit: 2831

weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Perino et al. teach the use of a PZT dielectric layer having a thickness of 0.3 μm . It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the capacitor of Malone et al. by forming the PZT dielectric layer with a thickness of 0.3 μm as taught by Perino et al., since such a modification would miniaturize the capacitor.

Regarding claim 12, Malone et al. disclose a use of a ceramic passive component (100) which comprises: a carrier substrate, a first electrode (154) comprising a metal having a first surface disposed on a substrate, a dielectric layer (152) having a first surface disposed on a second surface of the first electrode, a second electrode (154) disposed on a second surface of the dielectric layer, and said dielectric comprises a ferroelectric ceramic material with a voltage dependent relative dielectric constant (see abstract & col. 3 lines 28-36).

Malone et al. disclose the claimed invention except for the thickness of the at least one dielectric layer being in the range of about 0.25-0.75 μm .

Perino et al. teach the use of a PZT dielectric layer having a thickness of 0.3 μm . It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the capacitor of Malone et al. by forming the PZT

Art Unit: 2831

dielectric layer with a thickness of 0.3 μm as taught by Perino et al., since such a modification would miniaturize the capacitor.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Malone et al. (US 6,088,214) and Perino et al. (US 5,525,528) as applied to claim 3 above, and further in view of Summerfelt (US 5,851,896).

The modified Malone et al. disclose the claimed invention except for the first electrically conducting layer of the second electrode comprises Ti.

Summerfelt teaches that it is known in the capacitor art to form an electrode having two conductive layers wherein the first conductive layer is formed from a Ti material (see table).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the modified Malone et al. by forming the first electrically conducting layer of the second electrode from a Ti material, since such a modification would provide a material with excellent adhesive qualities for the electrode of Malone et al.

Response to Arguments

7. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


Art Unit: 2831

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric W Thomas whose telephone number is (703) 305-0878. The examiner can normally be reached on Mon & Sat 9:00AM - 9:30PM; Tues-Fri 5:30PM-10:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 703-308-3682. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ewt
June 11, 2003


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